REMARKS

Claims 1 and 2 are pending in the present application, with claim 1 being independent. Favorable reconsideration and allowance of the subject application are respectfully requested.

Claim Rejection Under 35 U.S.C. §103

The Examiner has finally rejected both pending claims under 35 U.S.C. §103(a) for being unpatentable over Takiyasu et al. (US 5,113,392) in view of Aziz et al. (US 5,548,646). This rejection is again respectfully traversed. The Examiner alleges that Takiyasu teaches the fragmentation of a transmission message into a plurality of information blocks, and that Aziz teaches encryption of packets, and that it would be obvious for a person of ordinary skill in the art to combine these references and arrive at the claimed invention. Applicant respectfully disagrees.

The Office Action Fails to Establish to a Prima Facie of Case of Obviousness

In order to establish a *prima facie* case of obviousness, a rejection made under 35 U.S.C. § 103 must meet three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

There is No Motivation to Combine the Cited Prior Art References

It is respectfully submitted that the two cited prior art references taken either alone or in combination do not recognize the problem solved by the Applicants' claimed invention. More specifically, the Applicants' claimed invention solves the problem of an encrypted packet of data that does not fit within a predetermined data structure. Moreover, it is respectfully submitted that the only motivation to combine the cited references in the way suggested in the Office Action is gleaned from the hindsight provided by Applicants' specification. The Office Action on page 3 concedes that, "Takiyasu does not expressly disclose or fairly suggest encryption means for separately encrypting the plurality of divided data packets to form a plurality of encrypted packets."

Takiyasu does not disclose encryption, and Aziz does not disclose divided packets. There is simply no reason or motivation to combine the references to encrypt divided packets. While the Examiner points out that that col. 1, lines 13-17 of Aziz suggests the desirability of encrypting sensitive information, Aziz totally fails to recognize the problem of encrypted packets which are too large to fit within a predetermined data structure, and Aziz provides no motivation or solution to the problem solved by the Applicant's claimed invention.

The Applicants respectfully submit that the Office Action is based upon a selective combination of features found in the two references, and that such selective combining is impermissible. As stated in *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed. Cir. 1985), "When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself." It is respectfully submitted that the Office Action cites the

Takiyasu patent, and then utilizes the present application as a road map to selectively replace various features of Takiyasu with features from the Aziz patent.

The Office Action Fails To Show A Reasonable Probability Of Success

In addition to failing to show the necessary motivation, the Office Action has also failed to show the required reasonable expectation of success that the cited prior art can be combined as suggested in the Office Action. More specifically, since the headers of the segmented packets of Takiyasu are different from the headers of the Aziz packets, there is no reason to believe that one skilled in the art could successfully take the segmented packets of Takiyasu encrypt them according to techniques of Aziz and have a workable protocol for use in a communication system. This is especially true since the packets of Fig. 2 of Takiyasu are included in a SONET frame for transport over a synchronous optical network, and the packets of Fig. 7-11 of Aziz are formatted in an Internet Protocol (IP) for transport over the Internet.

SONET is generally considered to be in the Physical - Layer 1 of the OSI model, and IP is generally considered to be in the Network - Layer 3. See the attached excerpts defining "OSI" and "SONET" from the *Computer Desktop Encyclopedia*, McGraw-Hill, 2001. It should also be noted that encryption and decryption of the type associated with the claimed invention is generally considered to be in the Presentation - Layer 6. (See the attached definition of OSI Presentation – Layer 6.)

Since the cited references are directed to different types of packets having different protocols for different networks layers, it is respectfully submitted that the Office Action has failed to demonstrate a reasonable expectation of success that the cited references can be combined as

suggested in the Office Action. Accordingly, the Applicant respectfully requests the final rejection of claim 1 be withdrawn.

Dependent Claim 2

Dependent claim 2 should be considered allowable for at least the same reasons as the allowable base claim.

CONCLUSION

In view of the above remarks, this application appears to be in condition for allowance and the Examiner is, therefore, requested to reexamine the application and pass the claims to issue.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at telephone number (703) 205-8000, which is located in the Washington, DC area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: September 2, 2005

Respectfully submitted,

By

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Attachment: Excerpt from "Computer Desktop Encyclopedia"

Computer Desktop Encyclopedia

Ninth Edition

Alan Freedman

Osborne/McGraw-Hill

New York Chicago San Francisco
Lisbon London Madrid Mexico City Milan
New Delhi San Juan Seoul Singapore Sydney Toronto

OSD (1) (On-Screen Display) An on-screen control panel for adjusting monitors and TVs. The OSD is used for contrast, brightness, horizontal and vertical positioning and other monitor adjustments.

(2) (Open Software Description) A data format for describing a software package, module or component. Based on XML, OSD is designed for distributing and updating software via push technology. Initially introduced for Windows, it is expected to be adopted for other platforms.

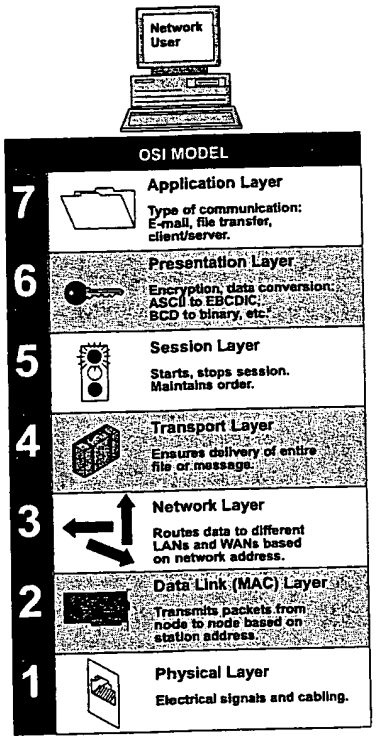
OSF/Motif See *Motif* and *Open Group*.

OSI (Open System Interconnection) An ISO standard for worldwide communications that defines a framework for implementing protocols in seven layers. Control is passed from one layer to the next, starting at the application layer in one station, proceeding to the bottom layer, over the channel to the next station and back up the hierarchy.

At one time, most vendors agreed to support OSI in one form or another, but OSI was too loosely defined and proprietary standards were too entrenched. Except for the OSI-compliant X.400 and X.500 e-mail and directory standards, which are widely used, what was once thought to become the universal communications standard now serves as the teaching model for all other protocols.

Most of the functionality in the OSI model exists in all communications systems, although two or three OSI layers may be incorporated into one. See *OSI model*.

OSI model



Application—Layer 7 This top layer defines the language and syntax that programs use to communicate with other programs. The application layer represents the purpose of communicating in the first place. For example, a program in a client workstation uses commands to request data from a program in the server. Common functions at this layer are opening, closing, reading and writing files, transferring files and e-mail messages, executing remote jobs and obtaining directory information about network resouces.

Presentation—Layer 6 When data is transmitted between different types of computer systems, the presentation layer negotiates and manages the way data is represented and encoded. For example, it provides a common denominator between ASCII and EBCDIC machines as well as between different floating point and binary formats. Sun's XDR and OSI's ASN.1 are two protocols used for this purpose. This layer is also used for encryption and decryption.

Session—Layer 5 Provides coordination of the communications in an orderly manner. It determines one-way or two-way communications and manages the dialogue between both parties; for example, making sure that the previous request has been fulfilled before the next one is sent. It also marks significant parts of the transmitted data with checkpoints to allow for fast recovery in the event of a connection failure.

In practice, this layer is often not used or services within this layer are sometimes incorporated into the transport layer.

Transport—Layer 4 The transport layer is responsible for overall end to end validity and integrity of the transmission. The lower data link layer (layer 2) is only responsible for delivering packets from one node to another. Thus, if a packet gets lost in a router somewhere in the enterprise internet, the transport layer will detect that. It ensures that if a 12MB file is sent, the full 12MB is received.

"OSI transport services" include layers 1 through 4, collectively responsible for delivering a complete message or file from sending to receiving station without error.

Network—Layer 3 The network layer establishes the route between the sending and receiving stations. The node to node function of the data link layer (layer 2) is extended across the entire internetwork, because a routable protocol contains a network address in addition to a station addresses.

This layer is the switching function of the dial-up telephone system as well as the functions performed by routable protocols such as IP, IPX, SNA and AppleTalk. If all stations are contained within a single network segment, then the routing capability in this layer is not required. See *layer 3 switch*.

Data Link—Layer 2 The data link is responsible for node to node validity and integrity of the transmission. The transmitted bits are divided into frames; for example, an Ethernet, Token Ring or FDDI frame in local area networks (LANs). Layers 1 and 2 are required for every type of communications. For more on this layer, see *data link protocol*.

Physical—Layer 1 The physical layer is responsible for passing bits onto and receiving them from the connecting medium. This layer has no understanding of the meaning of the bits, but deals with the electrical and mechanical characteristics of the signals and signaling methods. For example, it comprises the RTS and CTS signals in an RS-232 environment, as well as TDM and FDM techniques for multiplexing data on a line. SONET also provides layer 1 capability.

OSI stack The protocol stack in the OSI model. See *OSI*.

OSP (Online Service Provider) See *online services*.

OSPF (Open Shortest Path First) A routing protocol that determines the best path for routing IP traffic over a TCP/IP network. OSPF is an interior gateway protocol (IGP), which is designed to work within an autonomous system. It is also a link state protocol that provides less router to router update traffic than the RIP protocol (distance vector protocol) that it was designed to replace. See *RIP* and *routing protocol*.

OSS (Open Source Software) Software that can be modified and recompiled by the user. See *open source*.

OSTA (Optical Storage Technology Association, Santa Barbara, CA, www.osta.org) A membership organization composed of major optical drive manufacturers. Its purpose is to endorse standards and promote the use of optical media in computing.

OSU (Open Source UNIX) Refers to the UNIX variants that are maintained as open source, which are primarily BSD UNIX and Linux.

OSX See *Mac OS X*.

OT (Object Technology) The use of objects.

OTDR (Optical Time Domain Reflectometer) A test instrument that analyzes the light loss in an optical fiber. Used to find faults, splices and bends in the line, it works by sending out a light pulse and measuring its reflection. Such devices can measure fiber lines that are longer than 150 miles.

OTG (The OBJECTive Technology Group, Ltd., Alexandria, VA, www.theotg.com) An organization devoted to distributed computing and object technology. Founded in 1994, it augments the object and Internet standards community and serves as an intermediary between them and ISVs and users. The OTG hosts the Object Oriented Technology & Symposium (OOTS) conferences for communications and media, the financial industry and the Federal Government.

OTOH Digispeak for "on the other hand."

OTP (1) (One Time Programmable) Refers to programming the content into chips such as ROMs and EEPROMs, which cannot be altered.

(2) (One Time Pad) A cryptography method that uses a random number to generate a unique encryption key, which is stored on a smart card. See *SwapCrypt*.

(3) (Open Trading Protocol) A framework for Internet commerce that provides a consistent purchasing experience regardless of the hardware and software used.

OTPROM

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See *printe*

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solid state memory Any transistorized, semiconductor or thin film memory that contains no mechanical parts. See *solid state disk*.

solid state relay A relay that contains no mechanical parts. All switching mechanisms are semiconductor or thin film components.

soliton A laser pulse that retains its shape in a fiber over long distances. By generating the pulse at a certain frequency and at a certain power level, the pulse takes advantage of competing dispersion effects. As it travels, the pulse is lengthened and then shortened back to its original size.

solutions The IT buzzword of the twenty-first century. Nobody makes products anymore; everybody just provides solutions! See *solutions provider*.

solutions provider An organization that provides a mix of consulting services, custom programming and hardware to solve a customer's information problem. The hardware may be manufactured by the company, purchased from a third party or merely recommended. "Solutions" implies a range of custom-tailored services rather than only off-the-shelf packages. See *solutions*.

solver Mathematical mechanisms that allow spreadsheets to perform goal seeking.

SOM (1) (System Object Model) An object architecture from IBM that provides a full implementation of the CORBA standard. SOM is language independent and is supported by a variety of large compiler and application development vendors. DSOM, for distributed SOM, allows objects to be used across the network.

(2) (Self Organizing Map) A two-dimensional map that shows relationships in a neural network.

SONET (Synchronous Optical NETwork) A fiber-optic transmission system for high-speed digital traffic. Employed by telephone companies and common carriers, SONET speeds range from 51 megabits to multiple gigabits per second. SONET is an intelligent system that provides advanced network management and a standard optical interface. It uses a self-healing ring architecture that is able to reroute traffic if a line goes down. SONET backbones are widely used to aggregate lower-speed T1 and T3 lines.

SONET is specified in the Broadband ISDN (B-ISDN) standard. The European counterpart is SDH. Following are the levels of service. OC (Optical Carrier) refers to the optical signal, and STS (Synchronous Transport Signal) refers to the electrical signal, which is the same speed.

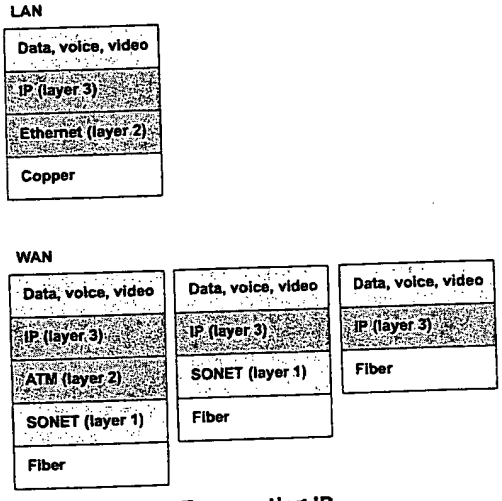
SONET uses time division multiplexing (TDM) to send multiple data streams simultaneously. Its smallest increment of provisioning is VT-1.5, which provides 1.7 Mbps of bandwidth. The next increment, STS-1, jumps to 51.84 Mbps. Any data stream that does not fill that channel goes wasted.

Bellcore's GR-2837 standard maps ATM cells onto SONET, turning a SONET pipe into a cell-switched (packet-switched) transmission carrier that utilizes the full bandwidth of the medium without waste.

SONET is built in a self-healing ring architecture which uses at least two transmission paths in the event one fails (see *SONET ring*).

SONET CIRCUITS

Service		Speed (Mbps)
	VT-1.5	1.7
OC-1	STS-1	51.84 (28 DS1s or 1 DS3)
OC-3	STS-3	155.52 (3 STS-1s)
OC-3c	STS-3c	155.52 (concatenated)
OC-12	STS-12	622.08 (12 STS-1, 4 STS-3)
OC-12c	STS-12c	622.08 (12 STS-1, 4 STS-3c)
OC-48	STS-48	2488.32 (48 STS-1, 16 STS-3)
OC-192	STS-192	9953.28 (192 STS-1, 64 STS-3)
OC-768	STS-768	39813,12 (768 STS-1, 256 STS-3)



Transporting IP
In a WAN or over the Internet, IP traffic is widely carried over SONET lines, either using ATM as a management layer or over SONET directly. In the future, IP is exptected to travel directly over DWDM fiber (rightmost diagram).